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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------------|------------------|
| 10/809,436 | 03/26/2004 | Steven T. Fink | 250975US6 YA | 8103 |
| 22850 | 7590 | 11/08/2006 | | |
| C. IRVIN MCCLELLAND OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | | |
| | | | EXAMINER ZERVIGON, RUDY | |
| | | | ART UNIT 1763 | PAPER NUMBER |

DATE MAILED: 11/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/809,436

Applicant(s)

FINK, STEVEN T.

Examiner

Rudy Zervigon

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference characters not mentioned in the description: 290. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference characters in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 5, 6, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Selbrede; Steven C (US 5094885 A). Selbrede teaches a temperature-controlled shield ring (29, 125, 127, 129; Figure 1, 5; column 5; lines 46-57), comprising: a shield ring (29, 125, 127, 129;

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Figure 1, 5; column 5; lines 46-57) for surrounding a substrate (27; Figure 1, 5; column 5; lines 46-57) holder (29, 125, 127, 129; Figure 1, 5; column 5; lines 39-46); and coolant (“water”; column 7; lines 16-24) passageways (29; Figure 2; column 7; lines 16-24) within a portion of the shield ring (29, 125, 127, 129; Figure 1, 5; column 5; lines 46-57) for controlling a temperature of the shield ring (29, 125, 127, 129; Figure 1, 5; column 5; lines 46-57) by passing a coolant (“water”; column 7; lines 16-24) through the coolant (“water”; column 7; lines 16-24) passageways (29; Figure 2; column 7; lines 16-24), as claimed by claim 1.

Selbrede further teaches:

- i. The temperature-controlled shield ring (29, 125, 127, 129; Figure 1, 5; column 5; lines 46-57) according to claim 1, wherein the shield ring (29, 125, 127, 129; Figure 1, 5; column 5; lines 46-57) comprises: a cap (upper cross-hatch 29 covering passage; Figure 1, 5; column 5; lines 46-57); and a heat conducting element (23/25; Figure 1, 5; column 5; lines 46-57) connected between the cap (upper cross-hatch 29 covering passage; Figure 1, 5; column 5; lines 46-57) and a location where a substrate (27; Figure 1, 5; column 5; lines 46-57) would rest during processing, the heat conducting element (23/25; Figure 1, 5; column 5; lines 46-57) configured to transfer heat from the substrate (27; Figure 1, 5; column 5; lines 46-57) to the cap (upper cross-hatch 29 covering passage; Figure 1, 5; column 5; lines 46-57), as claimed by claim 2
- ii. The temperature-controlled shield ring (29, 125, 127, 129; Figure 1, 5; column 5; lines 46-57) according to claim 1, wherein the coolant (“water”; column 7; lines 16-24) comprises a dielectric fluid, as claimed by claim 5

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- iii. The temperature-controlled shield ring (29, 125, 127, 129; Figure 1, 5; column 5; lines 46-57) according to claim 1, further comprising an insulator (131; Figure 5; column 9; line 21) housed between the shield ring (29, 125, 127, 129; Figure 1, 5; column 5; lines 46-57) and the substrate (27; Figure 1, 5; column 5; lines 46-57) holder (29, 125, 127, 129; Figure 1, 5; column 5; lines 39-46), as claimed by claim 6
- iv. The temperature-controlled shield ring (29, 125, 127, 129; Figure 1, 5; column 5; lines 46-57) according to claim 1, wherein the shield ring (29, 125, 127, 129; Figure 1, 5; column 5; lines 46-57) is configured to attach to the substrate (27; Figure 1, 5; column 5; lines 46-57) holder (29, 125, 127, 129; Figure 1, 5; column 5; lines 39-46) without the use of fasteners, as claimed by claim 8

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 4, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Selbrede; Steven C (US 5094885 A) in view of Chiang; Tony P. et al. (US 6630201 B2). Selbrede is discussed above.

Selbrede does not teach:

- i. The temperature-controlled shield ring (29, 125, 127, 129; Figure 1, 5; column 5; lines 46-57) according to claim 2, wherein the cap (upper cross-hatch 29 covering passage; Figure 1, 5; column 5; lines 46-57) comprises a ceramic material, as claimed by claim 3

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- ii. The temperature-controlled shield ring (29, 125, 127, 129; Figure 1, 5; column 5; lines 46-57) according to claim 2, wherein the cap (upper cross-hatch 29 covering passage; Figure 1, 5; column 5; lines 46-57) comprises anodized aluminum, as claimed by claim 4
- iii. The temperature-controlled shield ring (29, 125, 127, 129; Figure 1, 5; column 5; lines 46-57) according to claim 1, further comprising an adapter (lower cross-hatch 29 of passage; Figure 1, 5; column 5; lines 46-57) for connecting to a cooling system of the substrate (27; Figure 1, 5; column 5; lines 46-57) to provide coolant ("water"; column 7; lines 16-24) exchange between the shield ring (29, 125, 127, 129; Figure 1, 5; column 5; lines 46-57) and the substrate (27; Figure 1, 5; column 5; lines 46-57) holder (29, 125, 127, 129; Figure 1, 5; column 5; lines 39-46), as claimed by claim 7

Chiang teaches a similar anodized aluminum shield ring (182; Figure 17; column 20, lines 20-30) and a cooling system (column 18, lines 30-35).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Chiang's cooling system to Selbrede's apparatus and use anodized aluminum as a material of choice for Selbrede's apparatus.

Motivation to add Chiang's cooling system to Selbrede's apparatus and use anodized aluminum as a material of choice for Selbrede's apparatus is for "improved control of temperature" (column 18, lines 36-40) and for "electric isolation" (column 20, lines 20-30) as taught by Chiang, respectively.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

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US 20050164506 A1

US 20040261946 A1

US 20020029745 A1

US 7025855 B2

US 6723202 B2

US 6692575 B1

US 6676804 B1

US 6627050 B2

US 6605198 B1

US 6537422 B2

US 6508885 B1

US 6267862 B1

US 6123864 A

US 6073576 A

US 5942039 A

US 5766426 A

US 5595241 A

US 5556500 A

US 5539609 A

US 5505779 A

US 5494494 A

US 5476548 A

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US 5447570 A

US 5383971 A

US 5376213 A

US 5330607 A

US 5213658 A

US 5135634 A

US 4842703 A

US 4793975 A

US 4645218 A

US 4545327 A

US 4457825 A

US 4385979 A

US 4100055 A

JP 10249894 A

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272-1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official fax phone number for the 1763 art unit is (571) 273-8300. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272-1435.

Rudy Zervigon
9/27/6